

REMARKS

Claims 1-18 were pending. The applicants respectfully request reconsideration and allowance of this application in view of the above amendments and the following remarks. Applicants note that the finality of the office action is premature given that a new ground of rejection has been applied, e.g. the rejection of claim 18 over Sajima in view of Kudo. Further, no clear issue has developed as to the reasons for maintaining the rejections. Applicants respectfully request withdrawal of finality of the present office action.

Claims 1, 2, 5, 7, 8, 10, 11, and 18 were rejected under 35 USC 103(a) as being allegedly unpatentable over Sajima, U.S. Patent No. 5,530,788 in view of Kudo, JP 10-271837. The applicants respectfully request that this rejection be withdrawn for the following reasons.

Applicants submit Exhibit A herewith, which shows in FIG. 1 thereof, the turn-on and turn-off times of a PWM signal of the prior art, e.g. as described in Sajima and Kudo. As shown in FIG. 1, a stable on/off time is associated with Sajima and Kudo. Applicants note that, for example, on page 2 of Applicants' specification, when an overheat condition of a semiconductor switching element for driving a fan motor occurs, the switching element is either turned off or the duty cycle is reduced. In both scenarios, the overheat conditions are worsened since the fan motor is no longer driven or is driven at a lower speed reducing the ability of the fan to provide cooling.

In contrast, in accordance with the present invention, for example as shown in FIG. 2 of Exhibit A, a PWM signal is shown associated with the claimed driving control unit, where the rise time and fall time of the signal is controlled. In the present invention, the driving control unit instructs the driving state of the semiconductor switching element to the driving circuit so that the rise time and fall time of the semiconductor switching element during an output period of

the overheat state detecting signal are shorter than the rise time and fall time of the semiconductor switching element during a non-output period of the overheat state detecting signal leading to a variety of advantages such as reducing current in the switching element while maintaining device speed.

The Examiner admits that Sajima fails to disclose or suggest controlling the rise time and fall time of the semiconductor switching element. In an attempt to account for this deficiency, Kudo is cited as allegedly teaching the controlling the rise time and fall time. The applicants respectfully disagree with this characterization and note that Kudo only describes changing the period of the driving signal in response to overcurrent detection. When an overcurrent is detected, a gate of the switching device is intercepted whereupon the device is returned to an operating state within a time spacing before the next pulse and outputting the intercepted gate as a PWM signal, e.g. as a signal of the type shown in FIG. 1 of Exhibit A, where the PWM duty cycle timing is changed. Kudo fails to teach or suggest controlling the rise time and fall time as claimed.

Therefore, not only does the applied art combination fail to teach or suggest all the claimed features as required, but one of ordinary skill in the art would not look to Kudo for a teaching of controlling the rise time or fall time of a PWM signal associated with a driving circuit with a driving control unit as claimed since Kudo fails to provide such a teaching. Applicants incidentally note that the Examiner has not provided sufficient evidence of a suggestion or motivation that would guide one of ordinary skill in the art to combine the references. The Examiner's comments with regard to expectation of success typically are associated with chemical or biotechnology cases where a suggestion is at least present in the literature. In *In re Merk & Co., Inc.*, cited in the Examiner's Response to Arguments section, the claims were directed to a method of treating depression with amitriptyline (or nontoxic salts

thereof) and were rejected as *prima facie* obvious over prior art disclosures that amitriptyline is a compound known to possess psychotropic properties and that imipramine is a structurally similar psychotropic compound known to possess antidepressive properties, in view of prior art suggesting the aforementioned compounds would be expected to have similar activity because the structural difference between the compounds involves a known bioisosteric replacement and because a research paper comparing the pharmacological properties of these two compounds suggested clinical testing of amitriptyline as an antidepressant. Thus several suggestions or connections between the features of the claims, e.g. amitriptyline and depression, and the art, e.g. amitriptyline is similar in structure to imipramine which is known to possess antidepressive properties and thus it could be expected that amitriptyline could have antidepressive properties. A further suggestion was present in the art that amitriptyline should be tested as an antidepressant. The cumulative effect of these suggestions *drawn from the art* was to render the invention obvious in view of the clearly established expectation of success of amitriptyline in treating depression.

In the present rejection, there is no basis for applying an expectation of success argument to support a combination where there is no initial suggestion present of any kind related to control of rise time and fall time. In other words, neither reference teaches or suggests controlling the rise time of a PWM signal to address an overcurrent situation. Therefore, there would be no basis for any kind of expectation with regard to features which are not taught or suggested in the primary reference, e.g. Sajima, and are not even taught as alleged in the secondary reference, e.g. Kudo.

Accordingly it is respectfully submitted that a *prima facie* case of obviousness has not properly been established in that the applied art combination is improperly motivated and still fails to teach or suggest all the claimed features as required. It is requested therefore that the

rejection of independent claim 1 be reconsidered and withdrawn. Claims 2, 5, 7, 8, 10, 11, and 18, by virtue of depending from claim 1 are allowable for at least the reasons set forth hereinabove with regard to claim 1. It is respectfully requested that the rejection of claims 2, 5, 7, 8, 10, 11, and 18 be reconsidered and withdrawn

Claims 3, 12, 14, and 16 stand rejected under 35 USC 103(a) as being allegedly unpatentable over Sajima in view of Kudo and further in view of Li, U.S. Patent No. 4,547,715. The applicants respectfully request that this rejection be withdrawn for the following reasons.

Claims 3, 12, 14, and 16, by virtue of depending from claim 1, are allowable for at least the reasons set forth hereinabove with regard to claim 1. It is respectfully requested that the rejection of claims 3, 12, 14, and 16 be reconsidered and withdrawn.

Claim 4 stands rejected under 35 USC 103(a) as being allegedly unpatentable over Sajima in view of Kudo and further in view of Ito, U.S. Patent No. 5,068,777. The applicants respectfully request that this rejection be withdrawn for the following reasons.

Claim 4, by virtue of depending from claim 1, is allowable for at least the reasons set forth hereinabove with regard to claim 1. It is respectfully requested that the rejection of claim 4 be reconsidered and withdrawn.

Claim 6 stands rejected under 35 USC 103(a) as being allegedly unpatentable over Sajima in view of Kudo and further in view of Ohiwa, et al., U.S. Patent No. 6,703,803. The applicants respectfully request that this rejection be withdrawn for the following reasons.

Claim 6, by virtue of depending from claim 1, is allowable for at least the reasons set forth hereinabove with regard to claim 1. It is respectfully requested that the rejection of claim 6 be reconsidered and withdrawn.

Claim 9 stands rejected under 35 USC 103(a) as being allegedly unpatentable over Sajima in view of Kudo and further in view of Nishino et al., U.S. Patent No. 6,141,494. The applicants respectfully request that this rejection be withdrawn for the following reasons.

Claim 9, by virtue of depending from claim 1, is allowable for at least the reasons set forth hereinabove with regard to claim 1. It is respectfully requested that the rejection of claim 9 be reconsidered and withdrawn.

Claim 13 stands rejected under 35 USC 103(a) as being allegedly unpatentable over Sajima in view of Kudo and Li and further in view of Ito. The applicants respectfully request that this rejection be withdrawn for the following reasons.

Claim 13, by virtue of depending from claim 1, is allowable for at least the reasons set forth hereinabove with regard to claim 1. It is respectfully requested that the rejection of claim 13 be reconsidered and withdrawn.

Claim 15 stands rejected under 35 USC 103(a) as being allegedly unpatentable over Sajima in view of Kudo and Li and further in view of Oshiwa et al. The applicants respectfully request that this rejection be withdrawn for the following reasons.

Claim 15, by virtue of depending from claim 1, is allowable for at least the reasons set forth hereinabove with regard to claim 1. It is respectfully requested that the rejection of claim 15 be reconsidered and withdrawn.

Claim 17 stands rejected under 35 USC 103(a) as being allegedly unpatentable over Sajima in view of Kudo and Li and further in view of Nishino et al. The applicants respectfully request that this rejection be withdrawn for the following reasons.

Claim 17, by virtue of depending from claim 1, is allowable for at least the reasons set forth hereinabove with regard to claim 1. It is respectfully requested that the rejection of claim 17 be reconsidered and withdrawn.

To more fully address the Response to Arguments section of the Office Action, applicants provide comments as follows. Applicants first note that the primary focus of the previous response in regard to the combination of Sajima and Kudo was that the Examiner's evidentiary burden was not met in that no evidence was provided of a suggestion or motivation to support the combination. The Examiner's attempt to use an "expectation of success" argument is improper absent an evidentiary basis consisting of strong suggestions for the combination. In attempting to compare the present circumstance with the facts cited in connection with the "expectation of success" line of cases, the Examiner importantly contradicts his earlier admission that Sajima *fails to teach or suggest*, for example, the claimed driving control unit for controlling the rise time and fall time of the semiconductor switching element. This oversight is important in challenging the application of an "expectation of success" argument. Since there is no suggestion at all of controlling the rise time and fall time in Sajima, there is no basis for an expectation as argued in the remarks above. Therefore, in an apparatus claim, even where the secondary reference teaches the missing feature or features, there must be a suggestion for the combination. In a chemical case, many molecular structures are known, and the success of the application of any one structure in a compound often depends on experimentation. Therefore, when a strong enough suggestion of the action of a chemical compound can be adduced from the description in the art (e.g. through a description of the known action of a family of related compounds), even though the exact combination is not taught, there can be an expectation of success of making the claimed compound having the desired action.

Moreover, the cited section of Kudo, e.g. a PWM signal for making the switching element to a rise time (on) and a fall time (off) within a time shorter, does not describe controlling the rise time refers to causing the switching element to experience a transition event sooner than normal within the predetermined period. Kudo is silent with regard to controlling rise times or fall times as already noted. In other words, as described in the remarks above in connection with the first 103 rejection, Kudo is referring to shortening the period, which is described in applicants' specification as belonging to the known approaches for addressing overcurrent circumstances and is described as suffering from the same disadvantages, e.g. by changing the duty cycle, the speed is changed which affects the ability of, for example a fan motor, to cool the overheated circuit.

In view of the foregoing, the applicants respectfully submit that this application is in condition for allowance. A timely notice to that effect is respectfully requested. If questions relating to patentability remain, the examiner is invited to contact the undersigned by telephone.

Please charge any unforeseen fees that may be due to Deposit Account No. 50-1147.

Respectfully submitted,



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